**Study: of the carbonization kinetic of the Sugarcane Bagasse and Elephant Grass in bed fixed reactor**

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This papers describes the sugarcane bagasse and elephant grass carbonization kinetic in fixed bed reactor of the 200 mm of inner diameter and 100 mm of height. The Figure 1 show the transient temperature profiles obtained experimentally in the radial and the axial directions.

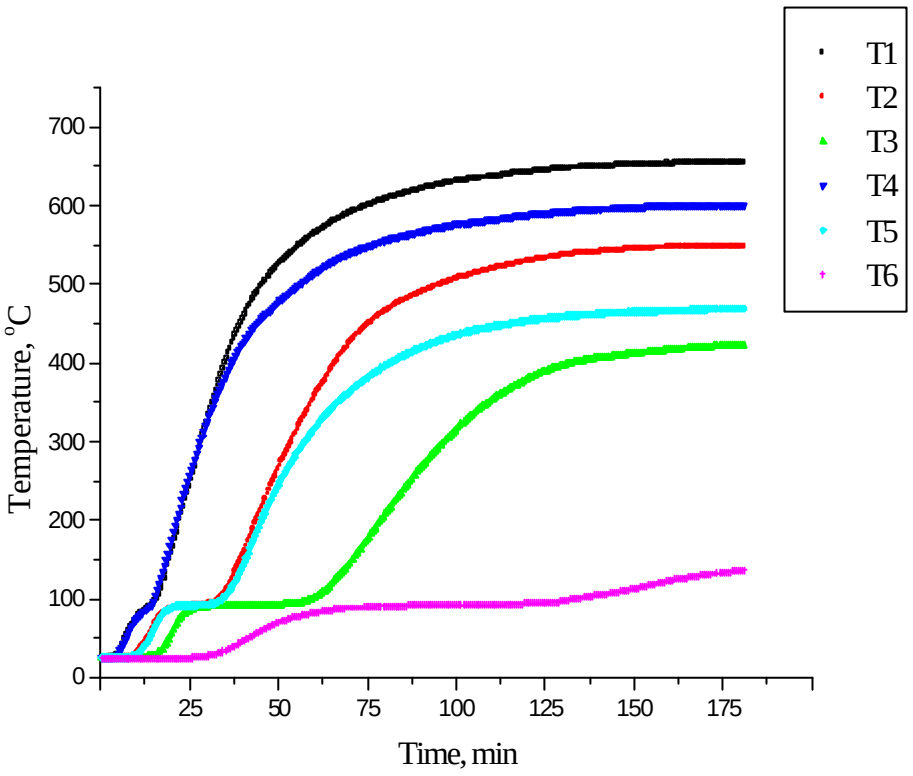


Figure 1 Transient temperature profiles in the radial and the axial directions

The reactor is of cylindrical section and the biomass is situate into reactor with a constant average apparent density of 150 $kgm^{-3}$. The heat flow is supplied through of electrical resistance's of variable power localized in the lower part of the reactor. This physical model allow to consider the biomass into reactor same to the larger cylindrical particle, with the know apparent density.

The temperature changes in various points of the biomass particle on the time were registered employed a acquisition system data with 6 canals. The mass loss on the time was registered too during decomposition process.

Empirical models were obtained which describes the influence of the heat flow supplied on the kinetic carbonization along of reactor height from each type of biomass. The results show that exist

accumulation of the heat on the below part of the particle, which give to retaining of the advance of the frontal part carbonization up to over part of the particle. This fact is consequence of the alterations in the physical properties of the by-products formed during thermal conversion process.

This results obtained are compared with the traditional Differential Thermal Analyzes realized with small size particles.

The mathematical modelling of this phenomena using of the computational fluid dynamic techniques and the CFX software version 4.0, allow to describe the by-dimensional and transient mass and heat transfers process. The validation of the mathematical model is made from to empirical models.